



July 19, 2016

Meagan E. Ormand Golder Associates Inc. 2108 W. Laburnum Ave. Suite 200 Richmond, VA 23227

RE: Project: Bremo Weekly Process Pace Project No.: 92305461

Dear Meagan Ormand:

Enclosed are the analytical results for sample(s) received by the laboratory on July 18, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Nicole Gasiorowski

Micolo Yasicronske

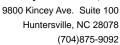
nicole.gasiorowski@pacelabs.com

Project Manager

Enclosures

cc: Ron DiFrancesco, Golder Associates Inc. Martha Smith, Golder Associates Inc. Mike Williams, Golder Associates Inc







CERTIFICATIONS

Project: Bremo Weekly Process

Pace Project No.: 92305461

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174

Alabama Certification #: 41320 Connecticut Certification #: PH-0216

Delaware Certification: FL NELAC Reciprocity

Florida Certification #: E83079 Georgia Certification #: 955

Guam Certification: FL NELAC Reciprocity Hawaii Certification: FL NELAC Reciprocity

Illinois Certification #: 200068

Indiana Certification: FL NELAC Reciprocity

Kansas Certification #: E-10383

Louisiana Certification #: FL NELAC Reciprocity

Louisiana Environmental Certificate #: 05007

Maryland Certification: #346 Michigan Certification #: 9911

Mississippi Certification: FL NELAC Reciprocity

Missouri Certification #: 236

Montana Certification #: Cert 0074

Charlotte Certification IDs

9800 Kincey Ave. Ste 100, Huntersville, NC 28078 North Carolina Drinking Water Certification #: 37706 North Carolina Field Services Certification #: 5342

North Carolina Wastewater Certification #: 12

Asheville Certification IDs

2225 Riverside Drive, Asheville, NC 28804 Florida/NELAP Certification #: E87648

Massachusetts Certification #: M-NC030

North Carolina Drinking Water Certification #: 37712

Nebraska Certification: NE-OS-28-14

Nevada Certification: FL NELAC Reciprocity

New York Certification #: 11608

North Carolina Environmental Certificate #: 667

North Carolina Certification #: 12710 North Dakota Certification #: R-216 Oklahoma Certification #: D9947 Pennsylvania Certification #: 68-00547 Puerto Rico Certification #: FL01264

South Carolina Certification: #96042001 Tennessee Certification #: TN02974

Texas Certification: FL NELAC Reciprocity

US Virgin Islands Certification: FL NELAC Reciprocity Virginia Environmental Certification #: 460165

Wyoming Certification: FL NELAC Reciprocity

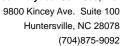
West Virginia Certification #: 9962C Wisconsin Certification #: 399079670

Wyoming (EPA Region 8): FL NELAC Reciprocity

South Carolina Certification #: 99006001 Florida/NELAP Certification #: E87627 Kentucky UST Certification #: 84

Virginia/VELAP Certification #: 460221

North Carolina Wastewater Certification #: 40 South Carolina Certification #: 99030001 Virginia/VELAP Certification #: 460222



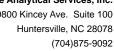


SAMPLE ANALYTE COUNT

Project: Bremo Weekly Process

Pace Project No.: 92305461

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92305461001	T4-160717-2145-S3	EPA 1664B	JMS	1	PASI-C
		EPA 200.7	RVK	1	PASI-O
		Trivalent Chromium Calculation	HEA	1	PASI-O
		EPA 200.8	DRS	10	PASI-O
		EPA 245.1	JMW	1	PASI-A
		SM 2540D	ALC	1	PASI-A
		EPA 218.7	AEM	1	PASI-O
		EPA 350.1	AES2	1	PASI-A
		SM 4500-CI-E	DMN	1	PASI-A





PROJECT NARRATIVE

Project: Bremo Weekly Process

Pace Project No.: 92305461

Method: **EPA 1664B**

Description: HEM, Oil and Grease Client: Golder_Dominion_Bremo

Date: July 19, 2016

General Information:

1 sample was analyzed for EPA 1664B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



PROJECT NARRATIVE

Project: Bremo Weekly Process

Pace Project No.: 92305461

Method: EPA 200.7

Description: 200.7 MET ICP

Client: Golder_Dominion_Bremo

Date: July 19, 2016

General Information:

1 sample was analyzed for EPA 200.7. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 200.7 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



PROJECT NARRATIVE

Project: Bremo Weekly Process

Pace Project No.: 92305461

Method: Trivalent Chromium Calculation
Description: Trivalent Chromium Calculation
Client: Golder_Dominion_Bremo

Date: July 19, 2016

General Information:

1 sample was analyzed for Trivalent Chromium Calculation. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



PROJECT NARRATIVE

Project: Bremo Weekly Process

Pace Project No.: 92305461

Method: EPA 200.8

Description: 200.8 MET ICPMS **Client:** Golder_Dominion_Bremo

Date: July 19, 2016

General Information:

1 sample was analyzed for EPA 200.8. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 200.8 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



PROJECT NARRATIVE

Project: Bremo Weekly Process

Pace Project No.: 92305461

Method: EPA 245.1 Description: 245.1 Mercury

Client: Golder_Dominion_Bremo

Date: July 19, 2016

General Information:

1 sample was analyzed for EPA 245.1. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 245.1 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



PROJECT NARRATIVE

Project: Bremo Weekly Process

Pace Project No.: 92305461

Method: SM 2540D

Description: 2540D TSS, Low-Level **Client:** Golder_Dominion_Bremo

Date: July 19, 2016

General Information:

1 sample was analyzed for SM 2540D. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

(704)875-9092



PROJECT NARRATIVE

Project: Bremo Weekly Process

Pace Project No.: 92305461

Method: EPA 218.7

Description: Hexavalent Chromium by IC **Client:** Golder_Dominion_Bremo

Date: July 19, 2016

General Information:

1 sample was analyzed for EPA 218.7. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 309644

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 1641532)
 - Chromium, Hexavalent
- MSD (Lab ID: 1641533)
 - · Chromium, Hexavalent



9800 Kincey Ave. Suite 100 Huntersville, NC 28078 (704)875-9092

PROJECT NARRATIVE

Project: Bremo Weekly Process

Pace Project No.: 92305461

Method: EPA 350.1

Description: 350.1 Ammonia

Client: Golder_Dominion_Bremo

Date: July 19, 2016

General Information:

1 sample was analyzed for EPA 350.1. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

(704)875-9092



PROJECT NARRATIVE

Project: Bremo Weekly Process

Pace Project No.: 92305461

Method: SM 4500-CI-E Description: 4500 Chloride

Client: Golder_Dominion_Bremo

Date: July 19, 2016

General Information:

1 sample was analyzed for SM 4500-CI-E. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 321671

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92305461001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MSD (Lab ID: 1782516)
 - Chloride

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.



ANALYTICAL RESULTS

Project: Bremo Weekly Process

Pace Project No.: 92305461

Date: 07/19/2016 05:40 PM

Sample: T4-160717-2145-S3	Lab ID: 923	805461001	Collected: 07/17/1	6 21:45	Received: 0	7/18/16 11:42	Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
Field Data	Analytical Met	ytical Method:						
Collected By	B. Diehl			1		07/17/16 21:53	3	
Collected Date	07/17/2016			1		07/17/16 21:53	3	
Collected Time	21:45			1		07/17/16 21:53		
Field pH	7.7	Std. Units	0.10	1		07/17/16 21:53	3	
HEM, Oil and Grease	Analytical Met	hod: EPA 166	64B					
Oil and Grease	ND	mg/L	5.0	1		07/19/16 08:28	3	
200.7 MET ICP	Analytical Met	hod: EPA 200	0.7 Preparation Met	hod: EP	A 200.7			
Tot Hardness asCaCO3 (SM 2340B	105000	ug/L	3300	1	07/19/16 11:31	07/19/16 15:39)	
Trivalent Chromium Calculation	Analytical Met	hod: Trivalen	t Chromium Calcula	tion				
Chromium, Trivalent	ND	ug/L	5.0	1		07/19/16 16:55	16065-83-1	
200.8 MET ICPMS	Analytical Met	hod: EPA 200	0.8 Preparation Met	hod: EP	A 200.8			
Antimony	5.5	ug/L	5.0	1	07/19/16 11:31	07/19/16 15:09	7440-36-0	
Arsenic	59.4	ug/L	5.0	1	07/19/16 11:31	07/19/16 15:09	7440-38-2	
Cadmium	ND	ug/L	1.0	1	07/19/16 11:31	07/19/16 15:09	7440-43-9	
Copper	ND	ug/L	5.0	1		07/19/16 15:09		
Lead	ND	ug/L	5.0	1		07/19/16 15:09		
Nickel Selenium	5.0 ND	ug/L	5.0 5.0	1 1		07/19/16 15:09 07/19/16 15:09		
Silver	ND ND	ug/L ug/L	0.40	1		07/19/16 15:09		
Olivei Thallium	ND ND	ug/L	1.0	1		07/19/16 15:09		
Zinc	ND	ug/L	25.0	1		07/19/16 15:09		
245.1 Mercury	Analytical Met	hod: EPA 245	5.1 Preparation Met	hod: EP	A 245.1			
Mercury	ND	ug/L	0.10	1	07/19/16 10:35	07/19/16 13:13	7439-97-6	
2540D TSS, Low-Level	Analytical Met	hod: SM 2540	DD .					
Total Suspended Solids	ND	mg/L	1.0	1		07/19/16 11:35	i	
Hexavalent Chromium by IC	Analytical Met	hod: EPA 218	3.7					
Chromium, Hexavalent	ND	ug/L	1.0	1		07/19/16 12:37	18540-29-9	
350.1 Ammonia	Analytical Met	hod: EPA 350).1					
Nitrogen, Ammonia	ND	mg/L	0.20	1		07/19/16 13:35	7664-41-7	
4500 Chloride	Analytical Met	hod: SM 450	0-CI-E					
Chloride	29.0	mg/L	5.0	1		07/19/16 11:58	16887-00-6	M1



Project: Bremo Weekly Process

Pace Project No.: 92305461

QC Batch: 321640 Analysis Method: EPA 1664B

QC Batch Method: EPA 1664B Analysis Description: 1664 HEM, Oil and Grease

Associated Lab Samples: 92305461001

METHOD BLANK: 1782345 Matrix: Water

Associated Lab Samples: 92305461001

Blank Reporting
Parameter Units Result Limit Analyzed Qualifiers

Oil and Grease mg/L ND 5.0 07/19/16 08:27

LABORATORY CONTROL SAMPLE: 1782346

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Oil and Grease mg/L 40 35.6 89 78-114

MATRIX SPIKE SAMPLE: 1782347

Date: 07/19/2016 05:40 PM

92305166001 Spike MS MS % Rec Parameter Units Result Conc. Result % Rec Limits Qualifiers 7.0 Oil and Grease 40 44.0 93 78-114 mg/L

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: Bremo Weekly Process

Pace Project No.: 92305461

Date: 07/19/2016 05:40 PM

QC Batch: 321670 Analysis Method: EPA 245.1 QC Batch Method: EPA 245.1 Analysis Description: 245.1 Mercury

Associated Lab Samples: 92305461001

METHOD BLANK: 1782501 Matrix: Water

Associated Lab Samples: 92305461001

> Blank Reporting Parameter Limit Qualifiers Units Result Analyzed ND 0.10 07/19/16 13:09

Mercury ug/L

LABORATORY CONTROL SAMPLE: 1782502

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Mercury ug/L 2.5 2.6 105 85-115

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1782504 1782503 MS MSD 92305461001 Spike Spike MS MSD MS MSD % Rec

Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD Qual ug/L ND 2.5 2.5 2.5 2.6 70-130 0 Mercury 100 101

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: Bremo Weekly Process

Pace Project No.: 92305461

QC Batch: 309692 Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7 Analysis Description: 200.7 MET

Associated Lab Samples: 92305461001

METHOD BLANK: 1641778 Matrix: Water

Associated Lab Samples: 92305461001

Blank Reporting
Parameter Units Result Limit Analyzed Qualifiers

Tot Hardness asCaCO3 (SM 2340B ug/L ND 3300 07/19/16 15:19

LABORATORY CONTROL SAMPLE: 1641779

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Tot Hardness asCaCO3 (SM 2340B ug/L 82700 84400 102 85-115

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1641780 1641781

MS MSD

92305463001 Spike Spike MS MSD MS MSD % Rec Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD Qual Tot Hardness asCaCO3 (SM ug/L 115000 82700 82700 203000 202000 70-130 107 105 1

2340B

Date: 07/19/2016 05:40 PM

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: Bremo Weekly Process

Pace Project No.: 92305461

QC Batch: 309691 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET

Associated Lab Samples: 92305461001

METHOD BLANK: 1641774 Matrix: Water

Associated Lab Samples: 92305461001

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Antimony	ug/L	ND	5.0	07/19/16 14:59	
Arsenic	ug/L	ND	5.0	07/19/16 14:59	
Cadmium	ug/L	ND	1.0	07/19/16 14:59	
Copper	ug/L	ND	5.0	07/19/16 14:59	
Lead	ug/L	ND	5.0	07/19/16 14:59	
Nickel	ug/L	ND	5.0	07/19/16 14:59	
Selenium	ug/L	ND	5.0	07/19/16 14:59	
Silver	ug/L	ND	0.40	07/19/16 14:59	
Thallium	ug/L	ND	1.0	07/19/16 14:59	
Zinc	ug/L	ND	25.0	07/19/16 14:59	

LABORATORY CONTROL SAMPLE: 1	1641775
------------------------------	---------

Date: 07/19/2016 05:40 PM

_		Spike	LCS	LCS	% Rec	0 115
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Antimony	ug/L	50	47.7	95	85-115	
Arsenic	ug/L	50	47.9	96	85-115	
Cadmium	ug/L	5	4.8	96	85-115	
Copper	ug/L	50	49.1	98	85-115	
Lead	ug/L	50	50.3	101	85-115	
Nickel	ug/L	50	51.5	103	85-115	
Selenium	ug/L	50	47.6	95	85-115	
Silver	ug/L	5	4.9	99	85-115	
Thallium	ug/L	50	49.3	99	85-115	
Zinc	ug/L	250	241	96	85-115	

MATRIX SPIKE & MATRIX SI	PIKE DUPLICAT	E: 16417	76		1641777						
			MS	MSD							
	923	305461001	Spike	Spike	MS	MSD	MS	MSD	% Rec		
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	Qual
Antimony	ug/L	5.5	50	50	54.0	53.7	97	96	70-130	1	
Arsenic	ug/L	59.4	50	50	110	110	101	101	70-130	0	
Cadmium	ug/L	ND	5	5	4.8	4.8	96	95	70-130	2	
Copper	ug/L	ND	50	50	49.9	49.7	98	97	70-130	0	
Lead	ug/L	ND	50	50	51.4	50.9	103	101	70-130	1	
Nickel	ug/L	5.0	50	50	53.3	52.0	97	94	70-130	2	
Selenium	ug/L	ND	50	50	49.6	50.3	96	97	70-130	1	
Silver	ug/L	ND	5	5	4.9	4.9	98	98	70-130	0	
Thallium	ug/L	ND	50	50	50.5	50.4	100	100	70-130	0	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: Bremo Weekly Process

Pace Project No.: 92305461

Date: 07/19/2016 05:40 PM

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1641776 1641777 MS MSD 92305461001 Spike Spike MS MSD MS MSD % Rec Conc. Parameter Units % Rec Limits RPD Result Conc. Result Result % Rec Qual ND Zinc 70-130 ug/L 250 250 243 243 94 0

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: Bremo Weekly Process

Pace Project No.: 92305461

QC Batch: 321681 Analysis Method: SM 2540D

QC Batch Method: SM 2540D Analysis Description: 2540D Total Suspended Solids

Associated Lab Samples: 92305461001

METHOD BLANK: 1782548 Matrix: Water

Associated Lab Samples: 92305461001

Blank Reporting
Parameter Units Result Limit Analyzed Qualifiers

Total Suspended Solids mg/L ND 1.0 07/19/16 11:35

LABORATORY CONTROL SAMPLE: 1782549

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers **Total Suspended Solids** mg/L 250 252 101 90-110

SAMPLE DUPLICATE: 1782550

Date: 07/19/2016 05:40 PM

Parameter Units Parameter Units Parameter Units Parameter Result Result RPD Qualifiers Total Suspended Solids mg/L ND ND

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: Bremo Weekly Process

Pace Project No.: 92305461

Date: 07/19/2016 05:40 PM

QC Batch: 309644 Analysis Method: EPA 218.7

QC Batch Method: EPA 218.7 Analysis Description: Chromium, Hexavalent IC

Associated Lab Samples: 92305461001

METHOD BLANK: 1641530 Matrix: Water

Associated Lab Samples: 92305461001

Blank Reporting
Parameter Units Result Limit Analyzed Qualifiers

Chromium, Hexavalent ug/L ND 1.0 07/19/16 12:11

LABORATORY CONTROL SAMPLE: 1641531

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Chromium, Hexavalent ug/L .075 .075J 100 85-115

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1641532 1641533

MS MSD 92305461001 Spike Spike MS MSD MS MSD % Rec Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD Qual Chromium, Hexavalent ug/L ND .075 .37J 85-115 2 E .075 .37J 98 109

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: Bremo Weekly Process

Pace Project No.: 92305461

Date: 07/19/2016 05:40 PM

QC Batch: 321656 Analysis Method: EPA 350.1

QC Batch Method: EPA 350.1 Analysis Description: 350.1 Ammonia

Associated Lab Samples: 92305461001

METHOD BLANK: 1782393 Matrix: Water

Associated Lab Samples: 92305461001

Blank Reporting
Parameter Units Result Limit Analyzed Qualifiers

Nitrogen, Ammonia mg/L ND 0.20 07/19/16 13:25

LABORATORY CONTROL SAMPLE: 1782394

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Nitrogen, Ammonia mg/L 5 4.9 99 90-110

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1782395 1782396

MS MSD 92305161001 Spike Spike MS MSD MS MSD % Rec Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD Qual Nitrogen, Ammonia ND 5 5 97 90-110 0 mg/L 4.8 4.9 97

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1782397 1782398

MS MSD 92305144002 MS MSD MS MSD Spike Spike % Rec RPD Units Parameter % Rec Result Conc. Conc. Result Result % Rec Limits Qual 0.22 5 5.1 Nitrogen, Ammonia mg/L 5 5.1 97 97 90-110 0

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



Project: Bremo Weekly Process

Pace Project No.: 92305461

Date: 07/19/2016 05:40 PM

QC Batch: 321671 Analysis Method: SM 4500-CI-E QC Batch Method: SM 4500-CI-E Analysis Description: 4500 Chloride

Associated Lab Samples: 92305461001

METHOD BLANK: 1782513 Matrix: Water

Associated Lab Samples: 92305461001

Blank Reporting
Parameter Units Result Limit Analyzed Qualifiers

Chloride mg/L ND 5.0 07/19/16 11:57

LABORATORY CONTROL SAMPLE: 1782514

Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers Chloride mg/L 20 21.4 107 90-110

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1782515 1782516

MS MSD 92305461001 Spike Spike MS MSD MS MSD % Rec Parameter Units Result Conc. Conc. Result Result % Rec % Rec Limits RPD Qual 29.0 90-110 0 M1 Chloride mg/L 10 10 37.9 37.9 90 89

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.



QUALIFIERS

Project: Bremo Weekly Process

Pace Project No.: 92305461

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether, Styrene, and Vinyl chloride.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

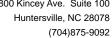
PASI-A	Pace Analytical Services - Asheville
PASI-C	Pace Analytical Services - Charlotte
PASI-O	Pace Analytical Services - Ormond Beach

ANALYTE QUALIFIERS

Date: 07/19/2016 05:40 PM

E Analyte concentration exceeded the calibration range. The reported result is estimated.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.





QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Bremo Weekly Process

Pace Project No.: 92305461

Date: 07/19/2016 05:40 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch	
92305461001	T4-160717-2145-S3					
92305461001	T4-160717-2145-S3	EPA 1664B	321640			
92305461001	T4-160717-2145-S3	EPA 200.7	EPA 200.7 309692 EPA 200.7		309694	
92305461001	T4-160717-2145-S3	Trivalent Chromium Calculation				
92305461001	T4-160717-2145-S3	EPA 200.8	309691	EPA 200.8	309693	
92305461001	T4-160717-2145-S3	EPA 245.1	EPA 245.1 321670 EPA 245.1		321694	
92305461001	T4-160717-2145-S3	SM 2540D	321681			
92305461001	T4-160717-2145-S3	EPA 218.7	309644			
92305461001	T4-160717-2145-S3	EPA 350.1	321656			
92305461001	T4-160717-2145-S3	SM 4500-CI-E	321671			



Document Name:

Sample Condition Upon Receipt(SCUR)

Document No.:

Document Revised: May 24, 2016

Page 1 of 2

Issuing Authority:

F-MEC-CS-009-Rev.03 Pace Mechanicsville Quality Office

Sample Condition Upon Client Name:	10			Project #: WO#: 92305461
Courier Dolder		200)	
Courier:	□us □ot			Client
Custody Seal Present? VYes No Sea				32000101
1	ls Intact?	ΨY	es L	No Date/Initials Person Examining Contents: 7 - 18-16
Packing Material: Bubble Wrap DBu	ubble Bags		lone	Other:RS6
RMD001	Туре о	if Ice.	Wet	☐ Blue ☐ None ☑ Samples on ice, cooling process has begun
Correction Factor: 0.0°C Cooler Temp Corrected (°C		3		Biological Tissue Frozen? Yes No N/A
Temp should be above freezing to 6°C				
USDA Regulated Soil (N/A, water sample) Did samples originate in a quarantine zone within the Unite	d States: CA	NY or	SC (check	maps)? Did samples originate from a foreign source (internationally,
☐Yes ☐No	u otates. e/	.,,	oc (check	including Hawaii and Puerto Rico)? Yes No
				Comments/Discrepancy:
Chain of Custody Present?	Yes	□No	□N/A	1.
Samples Arrived within Hold Time?	√Yes	No	□N/A	2.
Short Hold Time Analysis (<72 hr.)?	Yes	No	□N/A	3.
Rush Turn Around Time Requested?	√Yes	□No	□N/A	4.
Sufficient Volume?	Yes	□No	□N/A	5.
Correct Containers Used?	Yes	□No	□N/A	6.
-Pace Containers Used?	Yes	□No	□N/A	
Containers Intact?	✓Yes	□No	□N/A	7.
Samples Field Filtered?	Yes	□No	ØN/A	8. Note if sediment is visible in the dissolved container
Sample Labels Match COC?	Yes	□No	□N/A	9.
-Includes Date/Time/ID/Analysis Matrix: WW				
All containers needing acid/base preservation have been checked?	4	П.,		10. _{HNC3 pH<2}
All containers needing preservation are found to be in	√Yes	□No	□N/A	на рн<2
compliance with EPA recommendation?	1			H2SO4 pH<2
(HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide) Exceptions: VOA, Coliform, TOC, Oil and Grease,	Yes	∐No	□N/A	NaOH pH>12
DRO/8015 (water) DOC,LLHg	□Yes	□No	□n/a	NaOH/ZnOAc pH>9
Samples checked for dechlorination?	□Yes	□No	₩/A	11.
Headspace in VOA Vials (>5-6mm)?	□Yes	□No	□N/A	12.
Trip Blank Present?	☐Yes	□No	N/A	13.
Trip Blank Custody Seals Present?	☐Yes	□No	□N/A	
Pace Trip Blank Lot # (if purchased): CLIENT NOTIFICATION/RESOLUTION				
CLIENT NOTIFICATION/ RESOLUTION				Field Data Required? ☐ Yes ☐ No
Person Contacted:				Date/Time:
Comments/Sample Discrepancy:				
bereparity.				
Project Manager SCURF Review:	14			Date:
D. 1. 1. 1. 1				
Project Manager SRF Review: Note: Whenever there is a discrepancy affecting North Carolina	a compliance	samnler	a conv o	Date: f this form will be sent to the North Carolina DEHNR Certification Office (i.e.
Out of hold, incorrect preservative, out of temp, incorrect conta	ainers)	- Jumpies	., L COPY 0	Se sent to the North Caronia bernan certification office (i.e.

Face Analytical"

CHAIN-OF-CUS Y / Analytical Request Document

Required Client Information: All analyses to be performed under Golder-Pace MSA dated 2/19/2008 Address: Requested Due Date/TAT: Email To: Company: ITEM# 10 804-551-0129 Section D Required Client Information Sample IDs MUST BE UNIQUE Mormand@golder.com 2108 W Laburnum Ave, Ste 200 Richmond, VA 23227 Golder Associates SAMPLE ID ADDITIONAL COMMENTS Fax: 804-358-2900 -5-5 hie 3- Day DRINKING WATER
WATER
WASTE WATER
PRODUCT
SOIL/SOLID Valid Matrix Codes

MATRIX CODE U TS OT AR WE P WIT BW Project Number: Project Name: Purchase Order No.: Copy To: Required Project Information: Report To: Mormand@golder.com Martha_Smith@golder.com RELINQUISHED BY / AFFILIATION WW Ron_Difrancesco@golder.com MATRIX CODE (see valid codes to left) 1520-347,220 Bremo Weekly Compliance C (G=GRAB C=COMP) SAMPLE TYPE 1 DATE COMPOSITE SAMPLER NAME AND SIGNATURE TIME COLLECTED CT C SIGNATURE of SAMPLER: PRINT Name of SAMPLER: 7/17/16 The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately. DATE COMPOSITE END/GRAB Process 11811 Sh: 16 TIME a DATE 6 SAMPLE TEMP AT COLLECTION 0600 Reference: Pace Project Company Name: Invoice Information Ci Ci # OF CONTAINERS Address: ace Quote 142 10 TIME Unpreserved H₂SO₄ HNO₃ Meagan Ormand gaiapdataentry_invoices@golder.com Golder Associates × HCI 5 State of NaOH Na₂S₂O₃ ACCEPTED BY / AFFILIATION Methanol Other Analysis Test YIN 2 DATE Signed (MM/DD/YY): 200.8 - Sb, As, Cd, Cr (III Requested Analysis Filtered (Y/N) 200.8 - Pb, Ni ,Se, Zn, Cı 200.8 - Ag, Th 245.1 - Hg 218.6(7) - Cr (VI) REGULATORY AGENCY Site Location 7-18-16 1330 7118/16 SM4500 - Chloride TSU NPDES 181 DATE STATE: 1664B - Oil&Grease 350.1 - Ammonia-N SM2540D - TSS Oboo TIME RCRA 200.7 - Hardness GROUND WATER Page: S 3 Temp in °C Residual Chlorine (Y/N) Received on pH analysis @ 3/:53; pH = Ice (Y/N) Pace Project No./ Lab I.D. SAMPLE CONDITIONS 92305461 of OTHER DRINKING WATER Custody Sealed Cooler (Y/N) Samples Intact (Y/N) 000 8282 ge 26 of 26